

GeoZone – ISO course

Data quality

Chapter 4



Data quality and metadata

To encourage the sharing,
interchange and use of appropriate
geographic dataset



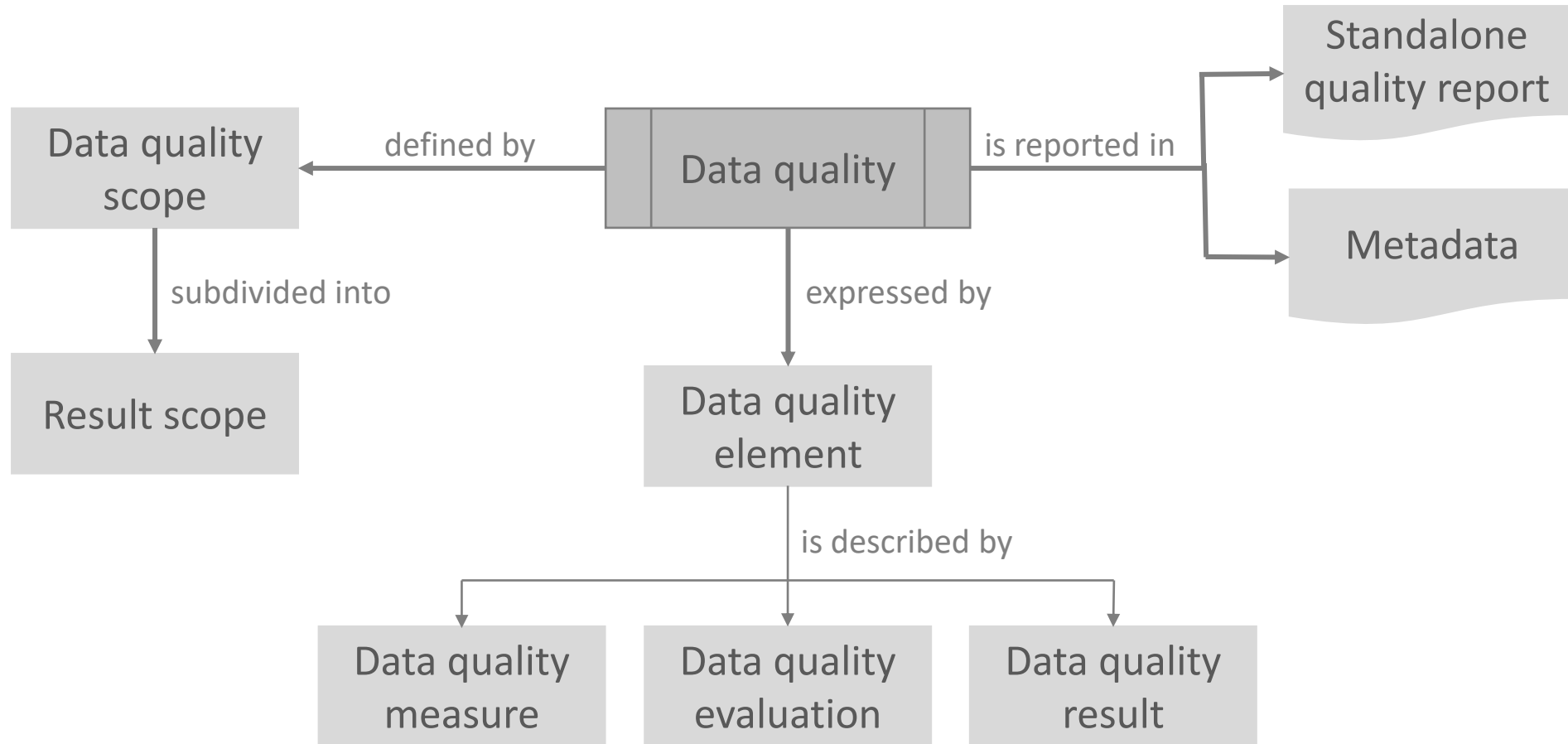
19157 – Data Quality



19115 – Metadata



Data quality conceptual model



● Data Quality - Scope

The extent or characteristic(s) of the data for which quality information is reported

Scope can refer to:

- The entire dataset
- A subgroup of data identified by a theme, a location, a date, etc.
- A single feature type

Not all available data quality elements of annex D may be applicable in GeoZone.

Data Quality - Evaluation

Completeness



Logical consistency



Positional accuracy



Thematic accuracy



Temporal quality



Aggregation



● Data quality elements

Completeness

measure about the presence and absence of features



Commission

number of excess items



Omission

number of missing items

● Data quality elements - 2

Logical consistency

degree of adherence to logical rules of data structure



conceptual consistency



domain consistency



format consistency

Data quality elements - 3

Positional accuracy

accuracy of the position of features



- **absolute or external accuracy**
- **relative or internal accuracy**
- **gridded data positional accuracy**

● Data quality elements - 4

Temporal accuracy

accuracy of the temporal attributes and temporal relationships of features



- accuracy of a time measurement
- temporal consistency
- temporal validity

Thematic accuracy

accuracy of quantitative attributes and the correctness of non-quantitative attributes

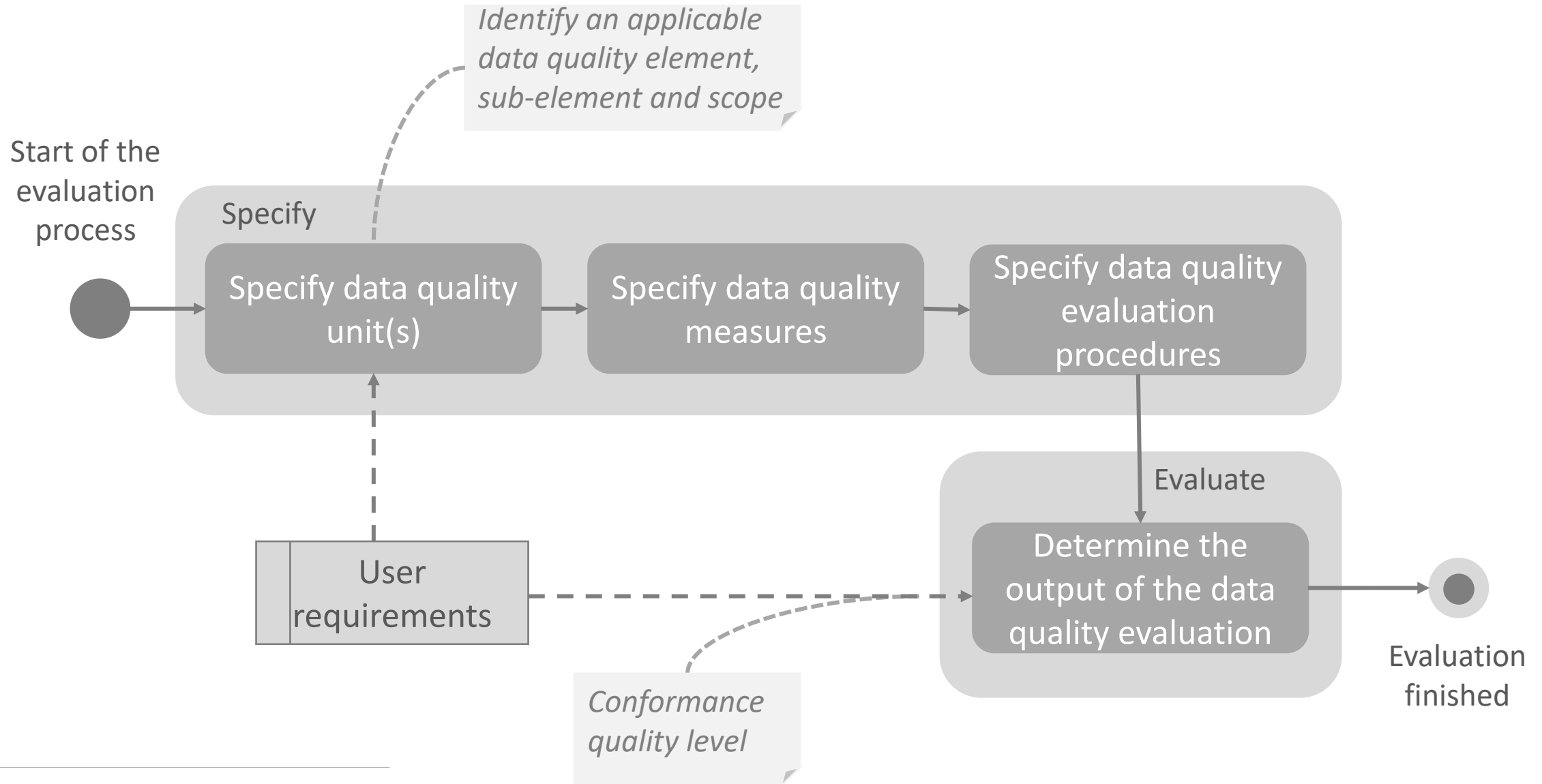


classification correctness

non-quantitative attribute correctness

quantitative attribute accuracy

Process for evaluating data quality





Data quality element

Name	Number of duplicated feature instance
Alternative name (alias)	D.4
Element name	Completeness
Sub-element name	Commission
Data quality basic measure	Error count
Definition	Total number of duplicated feature instances
Description	Count of all items in the dataset with duplicate geometry
Parameter	-
Value type	Integer
Value structure	-
Source reference	ISO/DIS 19157 Geographic information – Data quality
Example	Two or more polygons collected on top of each other
Identifier	4

Data quality report

- The last part of the conceptual model of quality for geographic data regards the Report
- In GeoZone the report is included in the **metadata** information

Metadata describes the administration, organization, contents and quality of geographic information of a datasets

- Among the metadata elements of GeoZone, there is also, as an optional element, the data quality element which contains the conformance result defined employing a Boolean value.



Link images & icons

- Slide 2: <https://www.shutterstock.com/it/image-photo/magnetic-compass-on-world-map-conceptual-520402105>
- Slide 5 and 6: complete by Dicron Studio from the Noun Project <https://thenounproject.com/search/?q=COMPLETENESS&i=2215459>
- Slide 5 and 7: rule by akash k from the Noun Project <https://thenounproject.com/search/?q=rules&i=2631577>
- Slide 5 and 8: Location by AS Design from the Noun Project <https://thenounproject.com/search/?q=web%20map&i=1212673>
- Slide 5 e 9: clock by Atif Arshad from the Noun Project <https://thenounproject.com/search/?q=clock&i=1243336>
- Slide 5 and 10: Compare by LAFS from the Noun Project <https://thenounproject.com/search/?q=compare&i=3377694>
- Slide 5: aggregate arrow by Symbolon from the Noun Project <https://thenounproject.com/search/?q=aggregation&i=2887837>
- Slide 13: Approve by SHAHAREA from the Noun Project <https://thenounproject.com/search/?q=in+conformance&i=3444534>